

does not admit with others the successive decompositions and recompositions in the whole course of the electricity through the humid conductor/ but thinks the middle parts are in themselves unaltered, or at least serve only to conduct the two contrary currents of electricity and matter which set off from the opposite poles.² The decomposition, therefore, of a particle of water, or a particle of salt, may take place at either pole, and when once effected, it is final for the time, no recombination taking place, except the momentary union of the transferred particle with the electricity be so considered.

227. The latest communication that I am aware of on the subject is by M. Hachette: its date is October 1832.³ It is incidental to the description of the decomposition of water by the magneto-electric currents (82). One of the results of the experiment is, that " it is not necessary, as has been supposed, that for the chemical decomposition of water, the action of the two electricities, positive and negative, should be simultaneous."

228. It is more than probable that many other views of electro-chemical decomposition may have been published, and perhaps amongst them some which, differing from those above, might, even in my own opinion, were I acquainted with them, obviate the necessity for the publication of my views. If such be the case, I have to regret my ignorance of them, and apologise to the authors,

229. That electro-chemical decomposition does not

depend upon any direct attraction and repulsion of the poles (meaning thereby the metallic terminations either of the voltaic battery, or ordinary electrical machine arrangements (48), upon the elements in contact with or near to them, appeared very evident from the experiments made in air (198, 201, etc.), when the substances evolved did not collect about any poles, but, in obedience to the direction of the current, were evolved, and I would say ejected, at the extremities of the decomposing substance. But notwithstanding the extreme dissimilarity in the character of air and metals, and the almost total difference existing between them as to their mode of conducting electricity, and becoming charged with it, it might perhaps still be contended, although quite hypothetically, that the bounding portions of air were now the surfaces or places of attraction, as the metals had been supposed to be before. In illustration of this and

¹ *Annales de Chimie*, torn, xxviii. pp. 192, 199.

² *Ibid.* p. 200.

³ *Ibid.* torn. li. p. 73.